



## Appendixes

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# Appendix A: Deer and Vegetation Monitoring Protocol

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## Introduction

The following appendix describes the protocols for deer and vegetation monitoring related to implementation of the White-tailed Deer Management Plan at Valley Forge National Historical Park (NHP). These protocols do not include monitoring associated with the park's Chronic Wasting Disease (CWD) Response Plan. See Appendix C for a description of monitoring associated with the CWD Response Plan.

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## Deer Monitoring Protocol

### Fall Spotlight Counts

Fall spotlight counts have been conducted by park staff since 1986 and represent the data with the longest period of record. The counts provide an assessment of trends in deer population size over time. Methods used in assessing these trends follow those recommended by Cypher, Yahner, and Cypher (1985). Due to the fact that there is no estimate of the number of deer observed during spotlight counts, this method does not provide an accurate estimate of deer population size. The following factors are taken into consideration when conducting spotlight counts.

**Timing:** Five spotlight counts would be conducted annually during a 2-week period in October. Historically, counts have been conducted as early as October 10 and as late as November 1. Counts have typically been conducted successfully during the last 2 weeks of October. Conducting these counts later than November is not recommended, due to the change in deer movement patterns associated with the breeding season.

**Weather:** Ambient weather conditions should meet minimum standards (wind – less than 15 miles per hour [mph]); rain – less than heavy and not steady; visibility – greater than 1 mile) as reported by the local weather service and measurement at the Valley Forge NHP weather station. Should conditions fail to meet minimum standards, the spotlight count would be postponed.

**Vehicle Type:** A vehicle that sits high above ground level, such as a pickup truck, should be used to conduct counts to facilitate deer observation. A National Park Service (NPS) pickup truck is recommended for safety purposes, as it is equipped with flashing warning lights. A flashing light has no detectable effect on spotlighted deer (Cypher, Yahner, and Cypher 1985).

**Data Collection Period:** Counts should begin 1 hour after official sunset and require approximately 2 hours to complete.

**Driving Route:** The spotlight-count route should remain the same as in previous years. This route covers approximately 15.5 miles of roadway located south of the Schuylkill River, within the park. Roadways or portions of roadways included on the route are Inner Line Drive, Outer Line Drive, County Line Road, Route 23, Route 252, and Yellow Springs Road. The majority of parking areas along the spotlight

route also are included during the count. The route should be driven at 5-10 mph. Since 1998, one section of the driving route along Route 23 east and west has become hazardous due to high traffic volume. Therefore, this section of the route should be driven along the Joseph Plumb Martin trail wherever possible.

**Observers:** As least two observers are required to conduct the count - one responsible for counting deer and one to drive and assist with spotting deer, when possible.

**Data Collection:** Ambient weather conditions should be recorded at the start and end of each count using a Kestrel pocket weather meter. Start time and end time, date, observer names, spotlight candlepower, and vehicle type also should be recorded prior to initiating each count.

Observers would use handheld spotlights for each survey. Spotlight candlepower has changed over the years, ranging from 200,000 candlepower to 400,000 candlepower due to changes in technology. It is recommended that a similar candlepower spotlight be used as long as possible (e.g., 200,000 candlepower spotlights are no longer available). When deer are located, the vehicle should be stopped (as necessary) to allow the observer to count deer as accurately as possible. Observers may use binoculars to count the number of deer. The number of deer observed is recorded and the count continued. The total number of deer observed during all five counts combined should be divided by five to yield an annual population index. These indices can be compared among years to determine whether deer population size is increasing, decreasing, or stable. Observers should be careful to avoid double counting animals.

### Spring Compartment Counts

Spring compartment counts have been conducted by park staff since 2000. This survey is based on a mark-capture study conducted between 1997 and 1999. The study developed a sighting index, expressed as the proportion of the number of marked deer seen to the number of marked deer known to occur. The number of deer observed during spring compartment counts is divided by the sighting index to generate an estimate of the deer population size within the park. Methods for recording this data follow those developed by Lovallo and Tzilkowski (2003). While this is a standard method for estimating population size (Conroy and Nichols 1996), it may become less accurate over time as park vegetation changes and there are changes in deer mortality, etc. Therefore, in the long-term, spring compartment counts should be used as a park-wide abundance index (Lovallo and Tzilkowski 2003), particularly if changes in plant communities alter visibility. The following factors are taken into consideration when conducting spring compartment counts.

**Timing:** Three compartment counts should be conducted annually during the spring – usually the last two weeks of April extending into the first week of May depending on timing of spring “green-up.” Historically, spring counts have been conducted as early as April 18 and as late as May 8.

**Weather:** Ambient weather conditions should meet minimum standards (wind – less than 15 mph; rain – less than heavy and not steady; visibility – greater than 1 mile) as reported by the local weather service and measurement at the Valley Forge NHP weather station. Should conditions fail to meet minimum standards, the survey would be postponed.

**Vehicle:** A vehicle that sits high above ground level, such as a pickup truck, is recommended to facilitate deer observation. An NPS pickup truck is recommended for safety purposes because it is equipped with flashing warning lights. However, type of vehicle for most routes is not as important as in spotlight counts because observers may get out of the vehicle and walk to areas to more easily observe deer. Compartment 1 requires use of a 4-wheel-drive vehicle due to the nature of the survey route. Use of flashers for all vehicle types is recommended.

**Data Collection Period:** Counts should be conducted during a 60-minute survey period beginning one hour before sunset (6:45-7:00 pm) and ending just after sunset (7:45-8:00 pm).

**Compartments and Driving Routes:** Five compartments, established as geographic sampling units for vehicle-based spring deer counts by Lovallo and Tzilkowski (2003), should be surveyed using established survey routes (see Figure 11). Compartments vary in area from approximately 1.0 to 1.3 square miles. Compartment boundaries are based on roads, streams, forest boundaries, and topography and were designed to minimize deer movement among compartments during counts. Driving routes follow all accessible roadways within a designated compartment. All roadways should be traversed slowly, at least once during each survey period. An observer may leave the vehicle and traverse a compartment on foot when terrain features obstruct viewing opportunities from roadways.

Compartments located south of the Schuylkill River should be surveyed simultaneously by multiple observers to prevent duplicate counts if deer traverse from one compartment to another.

**Observers:** At least two observers are required to conduct the survey - one with primary responsibility for counting deer and one to drive and assist with counting deer.

**Data Collection:** Ambient weather conditions should be recorded at the start and end of each count using a Kestrel pocket weather meter. Start time and end time, date, observer names, and compartment number should also be recorded prior to initiating each survey.

Observers should be provided with an aerial photograph of each compartment, with compartment boundaries and driving route indicated, as well as binoculars. All deer observed should be counted and recorded on a data sheet and on the aerial photograph where the deer were actually seen. Locations where deer are counted are indicated by using consecutive letters (A, B, etc.) on the aerial photograph and data sheet. Observers should indicate in the comments section of the data sheet if a “marked” deer is observed during the survey. A marked deer is any deer with a radio-collar or vinyl collar. Observers also should indicate whether deer are observed on private or park land.

Total number of deer observed on park land should be summed across all compartments and multiplied by the sighting index (0.58) to yield an annual population index. These indices can be compared among years to determine whether deer population size is increasing, decreasing, or stable. Because park vegetation communities have retained their open character and other factors affecting deer populations (e.g., mortality rate) are not believed to have changed significantly since 1999, park managers believe this method may still be accurate in estimating deer population size also.

## Reproductive Control Monitoring

The success of reproductive control would be monitored at both the population and individual animal level. The park would continue its fall spotlight surveys and spring compartment surveys, at which time observations would indicate if population growth had occurred. Additional observations would be made through the collection of data from treated deer that are killed on park roadways, related to the number of fetuses present, which would indicate if treated animals were infertile. Using protocols being implemented by the Pennsylvania Game Commission (PGC) to estimate deer reproductive rates state-wide, reproductive tracts from dead female deer would be removed and each uterus examined. The number and sex of fetuses present would be recorded. Age of fetuses would be determined based on measurement of crown-to-rump length and be used to calculate conception dates. Pregnancy rate would be defined as the percentage of does sampled that were pregnant. Reproductive rate would be defined as the average number of fetuses per doe.

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## Forest Health Monitoring Through the NPS Inventory and Monitoring Program

### Overview

Knowing the condition of natural resources in national parks is fundamental to the service's ability to manage park resources. The intent of the NPS monitoring program is to track a subset of physical, chemical, and biological elements, as well as processes of park ecosystems that are selected to represent the overall health or condition of park resources. The monitoring program also includes known or hypothesized effects of stressors, or elements that have important human values, known as "vital signs." To implement this program, the NPS grouped parks into 32 inventory and monitoring networks linked by geography and shared natural resource characteristics.

Valley Forge NHP is included in the Mid-Atlantic Inventory and Monitoring Network (MIDN). The MIDN consists of 10 parks distributed from southern Pennsylvania to southern Virginia, and extending from the piedmont to the coastal plain. The parks range in size from 224 acres (Booker T. Washington National Monument) to 197,411 acres (Shenandoah National Park), and include many sites of historical and cultural interest as well as diverse natural resources.

Forest health is one of the vital signs selected for monitoring by the MIDN in 2006. Network staff have developed a forest vegetation monitoring protocol that was implemented in all parks in the network, including Valley Forge NHP in 2007. The goal of the forest vegetation monitoring protocol is to provide scientific data that will increase an understanding of the status and trends in forest resources, inform park management, and are compatible with other monitoring protocols to facilitate regional analyses. Specifically for Valley Forge NHP, the forest vegetation monitoring should be capable of addressing questions related to the effectiveness of deer management on the health of forest resources in the park.

## Specific Monitoring Objectives

- Determine status and trends in forest structure, composition, and dynamics of canopy and understory woody species.
- Determine status and trends in the density and composition of tree seedlings and selected herbaceous species that are indicators of deer browse.
- Detect and monitor presence of invasive nonnative plants, nonnative plant diseases and pathogens, and forest pests.
- Determine status and trends in forest coarse woody debris and the availability of snags.
- Determine status and trends in soil Calcium:Aluminum and Carbon:Nitrogen ratios to assess the extent of base cation depletion, increased aluminum availability, and/or nitrogen saturation impacting MIDN forest soils.

## Basic Approach

The MIDN forest monitoring protocol is derived from the Forest Inventory and Analysis (FIA) approach used by the U.S. Forest Service. Not only is this protocol similar to the FIA approach, it also is directly compatible with other networks and parks in the northeast, national capital, and southeast regions. The protocol consists of permanent plots (20 by 20 meters [m] or approximately 66 by 66 feet) established in forested areas at each of the network parks. Trees and shrubs with diameters greater than or equal to 10 centimeters (cm) (approximately 4 inches) will be identified, measured, mapped, and permanently tagged and marked to ensure their accurate relocation and measurement in subsequent years. Tree condition and canopy health also will be evaluated. Saplings and small shrubs will be monitored in microplots, and twelve 1-square-meter quadrats (approximately 11 square feet) will track changes in seedling regeneration, invasive nonnative plants, and indicator herbaceous cover. Coarse woody debris will be measured along three transects originating in the plot, and a soil sample will be collected to evaluate changes in basic chemistry that can result from acid deposition.

Plots will be randomly located within forested areas at each park to ensure that inferences can be made regarding the condition of the park forested habitat with a high degree of statistical confidence. The number of plots at each park will be related to total forest area represented. Plots will be sampled on a 4-year rotating panel design, with one panel sampled each year at each park. Therefore, one quarter of the plots at a park will be monitored each year so as to detect possible inter-annual variation. Between 2007 and 2009, 21 plots were established and sampled in the park. An additional seven plots will be established and sampled in 2010. The first data summary would be completed in 2011.

## Integration with Current Monitoring

Valley Forge NHP is currently monitoring vegetation in 30 permanent paired plots (fenced and unfenced). Vegetation in the fenced plots (deer exclosures) provides valuable information on the potential forest structure and composition in the absence of deer. Unfenced plots represent forest conditions in the presence of deer. Achieving target values for a variety of metrics that are linked to these plots seems reasonable. Data from these plots will indicate when the structure and composition of the forest reaches a predefined proportion of what is found in the fenced plots. Therefore, the new plots established by MIDN should collect information that

allows for comparative analyses, or data collected in the current plots should be modified to meet the standards established by the new plot network. Adjustments appear to be minor based on the current and proposed methods.

### Issues Considered for New Plots

Given time and budget considerations, the MIDN estimates that it can complete 75 plots per year throughout the network to reach a total of 300 plots monitored. Allocation across parks in the network will be based on extent of forest to be sampled. Therefore, it is estimated that Valley Forge NHP will have about 28 plots. The ability to detect change will be increased by having more plots across the landscape than fewer, more intensively monitored plots.

### Metrics Relevant to Deer Management Success

Deer are directly reducing the regeneration capacity of the forests at Valley Forge NHP through intensive grazing. The forest monitoring should be capable of detecting whether the target deer densities are having a desired effect through forest recovery. Two important components of the forest monitoring plan include measures of seedling and sapling regeneration and cover of herbaceous plants, including invasive nonnative species.

### Seedling and Saplings

Stocking rates established by McWilliams et al. (2004) and metrics for determining these rates will be used in the new monitoring plots. MIDN will sample seedlings greater than 5 cm (approximately 2 inches) in height but less than 1 cm (approximately 0.4 inches) diameter breast height (dbh) in twelve 1 square-meter (approximately 11 square feet) quadrats that are spread throughout the plot. MIDN will record the number of live, established tree seedlings by species within the height classes (Table A-1). Weighting factors are applied according to the height class; therefore, one seedling that is greater than 1.5 m (approximately 5 feet) in height is equivalent to 50 seedlings that are 0.05-0.3 m (approximately 0.2-1 foot) in height. The forest will be considered adequately stocked if there is an average of 24 seedlings in the twelve 1-square-meter quadrats (approximately 11 square feet), or about 2 seedlings per 1 square meter. It is likely that natural stocking rates may vary across forest communities. Therefore, the original deer exclosures will be maintained as a measure of the potential seedling density possible, bearing in mind that these exclosures are located only on Mount Misery and Mount Joy.

**Table A-1      Height Class Categories for Enumeration of Seedlings**

Height Class	Weighting Factor
0.05-0.3 m	1
0.3-1 m	2
1-1.5 m	20
>1.5 m	50

Source: Tierney and Faber-Langendoen 2006, modified from McWilliams et al. 2004.



## Herbaceous Vegetation

Sampling of herbaceous vegetation will also be included in the twelve 1-square-meter quadrats. Herbaceous cover, especially nonnative invasive species, will influence the regeneration capacity of tree seedlings. Therefore, being able to directly correlate herbaceous cover to seedling density is an important metric, especially when regeneration rates are low even at low deer densities. Monitoring will focus on indicator species rather than a complete enumeration of herbaceous plants within the quadrats, including invasive nonnative plants, species that are considered to be highly preferred by deer as browse, and those species that are actively avoided by deer (Table A-2). Total herbaceous cover will be included as a metric for each quadrat. Percent cover classes will be assigned as follows: 0, <1, 1-2, 2-5, 5-10, 10-25, 25-50, 50-75, 75-95, and 95-100%.

**Table A-2 Preliminary Herbaceous Target Species to be Measured in Twelve 1-square-meter Quadrats**

Species	Common Name	Exotic (E) or Native (N)	Comments
<i>Akebia quinata</i>	Five-leaved akebia	E	
<i>Alliaria petiolata</i>	Garlic mustard	E	
<i>Ampelopsis brevipedunculata</i>	Porcelain berry	E	
<i>Berberis thunbergii</i>	Japanese barberry	E	
<i>Celastrus orbiculatus</i>	Oriental bittersweet	E	
<i>Centaurea biebersteinii</i>	Spotted knapweed	E	
<i>Cirsium arvense</i>	Canada thistle	E	
<i>Clematis terniflora</i>	Yam-leaf clematis	E	
<i>Duchesnea indica</i>	Indian strawberry	E	
<i>Euonymus fortunei</i>	Creeping euonymous	E	
<i>Glechoma hederacea</i>	Ground ivy	E	
<i>Hedera helix</i>	English ivy	E	
<i>Hemerocallis fulva</i>	Common daylily	E	
<i>Lespedeza cuneata</i>	Chinese lespedeza	E	Sericea lespedeza
<i>Lonicera japonica</i>	Japanese honeysuckle	E	
<i>Lonicera spp.</i>	Bush honeysuckles	E	
<i>Microstegium vimineum</i>	Japanese stiltgrass	E	
<i>Polygonum cuspidatum</i>	Japanese knotweed	E	
<i>Polygonum perfoliatum</i>	Mile-a-minute	E	
<i>Pueraria montana</i>	Kudzu	E	
<i>Ranunculus ficaria</i>	Lesser celandine	E	
<i>Rosa multiflora</i>	Multi-flora rose	E	
<i>Rubus phoenicolasius</i>	Wineberry	E	
<i>Vinca minor</i>	Periwinkle	E	
<i>Arisaema triphyllum*</i>	Jack in the pulpit	N	
<i>Aralia nudicaulis*</i>	Wild sarsaparilla	N	

**Table A-2 Preliminary Herbaceous Target Species to be Measured in Twelve 1-square-meter Quadrats (continued)**

Species	Common Name	Exotic (E) or Native (N)	Comments
<i>Eurybia divaricata</i> *	White wood aster	N	
Ferns (not including those below)		N	As a group
Grasses		N	As a group
<i>Impatiens capensis</i> *	Jewelweed	N	
Lilies		N	As a group
<i>Medeola virginiana</i> *	Indian cucumber	N	
Orchids		N	As a group
<i>Podophyllum peltatum</i>	Mayapple	N	
<i>Polystichum acrostichoides</i>	Christmas fern	N	
Sedges		N	As a group
<i>Thelypteris noveboracensis</i>	New York fern	N	
<i>Trillium</i> spp.		N	By species
<i>Vaccinium</i> spp.		N	By species
<i>Smilacina racemosa</i>	False Solomon's seal	N	

Source: Schmit and Chojnacky 2007

## Monitoring of Forest Understory Vegetation in Fenced and Unfenced Plots

In 1992, staff at Valley Forge NHP implemented a fixed plot monitoring system to evaluate changes in vegetation over time in two large forested areas at Valley Forge NHP. The objectives of this monitoring system are to: 1) describe the existing understory plant community on Mount Misery and Mount Joy in terms of species richness and abundance; and 2) determine changes in abundance and species composition of understory plant communities in fenced and unfenced plots over time.

Thirty vegetation sample sites were randomly located on Mount Misery and Mount Joy (15 in each area). At each sample site, paired plots were established where one plot was fenced to exclude deer, but no other herbivores. The control, or unfenced, plots were located 36.5 m (approximately 120 feet) from the center of the fenced plot in a random direction (except 3 plots were located 10-27.4 m away [approximately 33-90 feet]). Each plot was 2 by 2 meters in size (approximately 7 by 7 feet). Data was collected from fenced and unfenced plots in 1993, 1995, 1998, and 2003 and will continue to be collected approximately every 5 years. Data collected within each vegetation sample plot allows comparison of species diversity, herbaceous cover, and tree seedling density between fenced and unfenced plots. It also promotes identification of trends over time. Most tree, shrub, vine, and herbaceous vegetation were identified to species, although few only to genera. The number of tree seedlings by species was enumerated in all plots. The collection of data related to tree seedlings is currently being modified to be consistent with the FIA and MIDN Forest Health monitoring protocol by including only those seedlings greater than 5 cm (approximately 2 inches) but less than 1 cm dbh (approximately 0.4 inches).

Although monitoring conducted by the MIDN will serve as the primary means of monitoring success of forest regeneration and general recovery of forested plant communities, it is expected that monitoring of the 30 fixed plots will also continue for an undetermined amount of time to facilitate overall data interpretation (See Integration with Current Monitoring above).

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## Appendix B: Relevant Correspondence



IN REPLY REFER TO

### United States Department of the Interior

National Park Service  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, Pennsylvania 19406-1009

L76 VAFO(P)

August 17, 2009

Ms. Louise Brodnitz  
Advisory Council on Historic Preservation  
809 Old Post Office Building  
1100 Pennsylvania Avenue, NW  
Washington, DC 20004

Re: Final White-tailed Deer Management Plan/Environmental Impact Statement  
Valley Forge National Historical Park and Section 106 consultation

Dear Ms. Franco:

The National Park Service (NPS) continues to work toward the completion and implementation of a Final White-tailed Deer Management Plan/Environmental Impact Statement (EIS) for Valley Forge National Historical Park. We would like to present those undertakings subject to review under Section 106 consultation. Enclosed is a hard copy of the Final plan/EIS for your review and formal comment under stipulation VI.E of the 1995 Programmatic Agreement.

The Final plan/EIS contains four alternatives which are summarized below and presented in the plan/EIS on pages 2-5 through 2-46. The NPS has fully analyzed the impacts of each alternative on historic resources in the park including cultural landscapes, historic structures, and archeological resources (pages 4-49 through 4-68 of the plan/EIS). As described for each alternative below, these impacts range from long-term and beneficial to long-term, major and adverse. The NPS has determined there would be no impacts on other cultural resources (museum objects and ethnographic resources). The NPS preferred alternative has been identified as Alternative D (pages 2-44 through 2-46 of the plan/EIS) and fully achieves plan objectives related to historic resources. These objectives are to: (1) Protect the integrity of the cultural landscape, including the patterns of open versus wooded land, commemorative plantings, and vegetative screenings; and (2) Protect archeological resources by promoting the growth and maintenance of native vegetative cover and reducing trampling and soil erosion.

#### **No-Action Alternative: Alternative A**

The No-Action Alternative would continue the existing deer management activities of monitoring deer population size and vegetation, small scale fencing of selected vegetation,

removal of deer killed on roadways, public education, coordination with the Pennsylvania Game Commission, and continuation of limited surveillance for chronic wasting disease (CWD); no new deer management actions would be implemented. Recurring annual costs for Alternative A would range from \$14,828 to \$32,567 depending on the proximity of CWD to the park boundary. Overall costs associated with the life of the plan (15 years) would range from \$253,482 to \$403,257.

Under this alternative, the deer population would be expected to continue to increase or stabilize as a very high density and browsing and trampling would continue throughout the park. As a result, plant species abundance and diversity would continue to decline, the forest understory and associated wildlife habitat would continue to be degraded, and forest regeneration would not be expected to occur. The character-defining feature of the open and closed pattern of the cultural landscape would deteriorate and there would be continuing loss of features that contribute to the cultural landscape such as tree allées along roadways and commemorative groves. The loss of these features would result in a loss of integrity of the cultural landscape. Unprotected earthworks and the forts and redans in the park would continue to erode, as additional plantings to protect these structures would not be successful. Unprotected archeological sites, such as exposed hut holes and charcoal hearths, also would continue to erode due to trampling and loss of vegetative cover.

The overall impact of Alternative A on cultural landscapes, historic structures, and archeological resources would be long-term, major, and adverse. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative A would have an *adverse effect* on cultural landscapes, historic structures, and archeological resources.

## Action Alternatives

The three action alternatives (Alternatives B, C, and D) presented in the Final plan/EIS contain actions to support forest regeneration and to protect, conserve, and restore native plant communities and other natural and cultural resources. These alternatives also include full implementation of the park's CWD Response<sup>1</sup> Plan (provided in Appendix C of the plan/EIS). Action alternatives were developed by the interdisciplinary planning team, with feedback from the public and the science teams during the planning process. These alternatives meet, to varying degrees, the management objectives for Valley Forge NHP and also the purpose of and need for action, as expressed in Chapter 1: Purpose of and Need for Action of the Final plan/EIS.

**Alternative B** would combine several non-lethal actions including large-scale rotational fencing of 10% to 15% of the park's forested area and reproductive control of does to gradually reduce deer population in the park. Fencing would be rotated once adequate tree regeneration was observed. Under Alternative B, actions described under Alternative A including those to address CWD would continue. In addition, should CWD be detected within five miles of the park boundary or if the park fell within a state-established CWD containment zone, then deer would be live tested via tonsillar biopsy and CWD-positive deer would be removed from the

<sup>1</sup> Response to CWD includes disease surveillance (detection) actions as well as short-term actions to assess disease prevalence and distribution, minimize the likelihood of spread to surrounding communities and amplification within local deer populations, and if possible, promote elimination of CWD.

population. Recurring annual costs for Alternative B would range from \$246,103 to \$1,163,907 depending on the proximity of CWD to the park boundary. Overall costs associated with the life of the plan (15 years) would range from \$8,056,657 to \$14,025,682.

Under this alternative, the NPS would not achieve the target deer density within the life of the plan. Therefore, plant species abundance and diversity would continue to decline in areas outside rotational fences. No forest regeneration would occur outside fencing, and once fencing was rotated these areas would again be exposed to heavy deer browsing and removal of the forest understory. As a result, the integrity of the cultural landscape would continue to be diminished due to the inability of the forests to successfully regenerate or for new plantings to survive browsing. Rotational fencing would introduce a new structural element into the park's cultural landscape that would be inconsistent with the park's contributing buildings and structures and would alter the landscape and viewshed. The overall impact of Alternative B on cultural landscapes would be long-term, moderate, and adverse.

Unprotected earthworks and the forts and redans in the park would continue to erode, as additional plantings to protect these structures would not be successful. If the rotational fences were placed around the structures, then deer browse and trampling would be eliminated. Depending on the location of the fences, the overall impact of Alternative B on historic structures would be long-term, moderate to major, and adverse.

Unprotected archeological sites, such as exposed hut holes and charcoal hearths, also would continue to erode due to trampling and loss of vegetative cover. Installing the rotational fencing would result in numerous areas of ground surface disturbance at the base of the posts. The presence of extensive archeological resources in the park limits the number and extent of areas suitable for rotational fencing. Monitoring would take place in all areas of fence construction, and installation would stop should any unknown archeological resources be discovered. Archeological resources located within the rotational fencing would be protected against trampling in the short-term. However, once the fencing was removed, the new herbaceous vegetation would attract intense deer browsing. This would increase the chance of archeological resources being trampled. Therefore, the overall impact of Alternative B on archeological resources would be long-term, major and adverse.

The overall impact of Alternative B on cultural landscapes, historic structures, and archeological resources would be long-term, moderate to major, and adverse. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative B would have an *adverse effect* on cultural landscapes, historic structures, and archeological resources.

**Alternative C** is the Environmentally Preferred Alternative. This alternative would combine several lethal actions to address issues related to white-tailed deer. Under this alternative qualified federal employees or contractors would directly reduce the deer population in the park through sharpshooting and capture and euthanasia, where appropriate. Under Alternative C, actions described under Alternative A including those to address CWD would continue. In addition, should CWD be detected within five miles of the park boundary or if the park fell within a state-established CWD containment zone, then active lethal surveillance would be initiated. Recurring annual costs for Alternative C would range from \$56,113 to \$176,817.

depending on the proximity of CWD to the park boundary. Overall costs associated with the life of the plan (15 years) would range from \$1,461,332 to \$1,528,832.

A combination of lethal actions would result in achieving the initial target deer density within four years. Heavy browsing would be eliminated, allowing a diverse native plant community to develop. Forest regeneration would be restored, promoting re-establishment of the forest understory and perpetuation of existing forest cover. Reduced deer browsing would maintain the open and closed patterns of the cultural landscape and would also help protect select landscape plantings and other landscape features. Reduced browsing and trampling by deer would allow vegetative cover to be maintained on earthworks, forts, redans and archeological resources in the park and soil erosion would be minimized.

The overall impact of Alternative C on cultural landscapes, historic structures, and archeological resources would be long-term and beneficial. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative C would have *no adverse effect* on cultural landscapes, historic structures, and archeological resources.

**Alternative D** is the NPS Preferred Alternative. This alternative would combine lethal and non-lethal actions to address issues related to white-tailed deer. Under this alternative qualified federal employees or contractors would directly reduce the deer population in the park through sharpshooting as well as capture and euthanasia, where appropriate. Reproductive control of does would be implemented to maintain the deer population at the target deer density of 31-35 deer per square mile. Under Alternative D, actions described under Alternative A would continue. Actions to address CWD would remain the same as described under Alternative C. Recurring annual costs for Alternative D would range from \$108,363 to \$194,517. Overall costs associated with the life of the plan (15 years) would range from \$2,036,082 to \$2,925,282 depending on the proximity of CWD to the park boundary.

The impacts on cultural landscapes, historic structures, and archeological resources related to implementing these actions would be the similar to those described in Alternative C. Initial use of lethal actions would result in achieving the target deer density within four years. Heavy browsing would be eliminated, allowing a diverse native plant community to develop. Forest regeneration would be restored, promoting re-establishment of the forest understory and perpetuation of existing forest cover. Reduced deer browsing would maintain the open and closed patterns of the cultural landscape and would also help protect select landscape plantings and other landscape features. Reduced browsing and trampling by deer would allow vegetative cover to be maintained on earthworks, forts, redans and archeological resources in the park and soil erosion would be minimized.

The overall impact of Alternative D on cultural landscapes, historic structures, and archeological resources would be long-term and beneficial. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative D would have *no adverse effect* on cultural landscapes, historic structures, and archeological resources.

Alternatives C and D were closely ranked in their ability to meet all of the objectives. The NPS also considered the safety of implementing each alternative in selecting the preferred alternative.



Under Alternative D, the time that shooting would occur in the park would be limited to population reduction actions, followed by use of reproductive control to maintain the population at the desired density. By maintaining the efficiency of Alternative C in meeting the plan objectives and improving safety by reducing the time that sharpshooting activities would occur in the park, Alternative D proved to be the preferred alternative.

Under the terms of V.I.E of the 1995 Programmatic Agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, the NPS, "in consultation with the SHPO, will make a determination about which undertakings are programmatic exclusions under IV. A and B, and for all other undertakings, whether there is sufficient information about resources and potential effects on those resources to seek review and comment under 36 CFR 800.4-6 during the plan review process." The NPS is committed to avoiding, minimizing, and/or mitigating adverse impacts to historic resources and welcomes your comments regarding the above determinations.

Upon completion of Section 106 consultation, the Record of Decision will be prepared and distributed. Please direct any questions that you may have to Deirdre Gibson at (610) 783-1047 or [deirdre\\_gibson@nps.gov](mailto:deirdre_gibson@nps.gov). Written comments may be posted to <http://parkplanning.nps.gov> or sent to Superintendent, Valley Forge NHP, 1400 North Outer Line Drive, King of Prussia, Pennsylvania 19406. We would appreciate any written comments by September 15, 2009.

Alternately, if you concur with our determination of effect, you may indicate concurrence by signing this document below and returning it to the Superintendent at the address above or via fax to (610) 783-1038. We look forward to your correspondence.

Sincerely,



Michael A. Caldwell  
Superintendent

Enclosure

cc: Tricia Wingard, VHB  
Barbara Franco, Pennsylvania Historical and Museum Commission

Concurred by: \_\_\_\_\_  
(Name and Title) (Date)



IN REPLY REFER TO

## United States Department of the Interior

National Park Service  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, Pennsylvania 19406-1009

L76 VAFO(P)

August 17, 2009

Ms. Barbara Franco  
Executive Director  
Pennsylvania Historical and Museum Commission  
Bureau for Historic Preservation  
Commonwealth Keystone Building, Second Floor  
400 North St.  
Harrisburg, PA 17120-0093

Re: Final White-tailed Deer Management Plan/Environmental Impact Statement  
Valley Forge National Historical Park and Section 106 consultation

Dear Ms. Franco:

The National Park Service (NPS) continues to work toward the completion and implementation of a Final White-tailed Deer Management Plan/Environmental Impact Statement (EIS) for Valley Forge National Historical Park. We would like to present those undertakings subject to review under Section 106 consultation. Enclosed is a hard copy of the Final plan/EIS for your review and formal comment under stipulation VI.E of the 1995 Programmatic Agreement.

The Final plan/EIS contains four alternatives which are summarized below and presented in the plan/EIS on pages 2-5 through 2-46. The NPS has fully analyzed the impacts of each alternative on historic resources in the park including cultural landscapes, historic structures, and archeological resources (pages 4-49 through 4-68 of the plan/EIS). As described for each alternative below, these impacts range from long-term and beneficial to long-term, major and adverse. The NPS has determined there would be no impacts on other cultural resources (museum objects and ethnographic resources). The NPS preferred alternative has been identified as Alternative D (pages 2-44 through 2-46 of the plan/EIS) and fully achieves plan objectives related to historic resources. These objectives are to: (1) Protect the integrity of the cultural landscape, including the patterns of open versus wooded land, commemorative plantings, and vegetative screenings; and (2) Protect archeological resources by promoting the growth and maintenance of native vegetative cover and reducing trampling and soil erosion.

## No-Action Alternative: Alternative A

The No-Action Alternative would continue the existing deer management activities of monitoring deer population size and vegetation, small scale fencing of selected vegetation, removal of deer killed on roadways, public education, coordination with the Pennsylvania Game Commission, and continuation of limited surveillance for chronic wasting disease (CWD); no new deer management actions would be implemented. Recurring annual costs for Alternative A would range from \$14,828 to \$32,567 depending on the proximity of CWD to the park boundary. Overall costs associated with the life of the plan (15 years) would range from \$253,482 to \$403,257.

Under this alternative, the deer population would be expected to continue to increase or stabilize as a very high density and browsing and trampling would continue throughout the park. As a result, plant species abundance and diversity would continue to decline, the forest understory and associated wildlife habitat would continue to be degraded, and forest regeneration would not be expected to occur. The character-defining feature of the open and closed pattern of the cultural landscape would deteriorate and there would be continuing loss of features that contribute to the cultural landscape such as tree allées along roadways and commemorative groves. The loss of these features would result in a loss of integrity of the cultural landscape. Unprotected earthworks and the forts and redans in the park would continue to erode, as additional plantings to protect these structures would not be successful. Unprotected archeological sites, such as exposed hut holes and charcoal hearths, also would continue to erode due to trampling and loss of vegetative cover.

The overall impact of Alternative A on cultural landscapes, historic structures, and archeological resources would be long-term, major, and adverse. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative A would have an *adverse effect* on cultural landscapes, historic structures, and archeological resources.

## Action Alternatives

The three action alternatives (Alternatives B, C, and D) presented in the Final plan/EIS contain actions to support forest regeneration and to protect, conserve, and restore native plant communities and other natural and cultural resources. These alternatives also include full implementation of the park's CWD Response<sup>1</sup> Plan (provided in Appendix C of the plan/EIS). Action alternatives were developed by the interdisciplinary planning team, with feedback from the public and the science teams during the planning process. These alternatives meet, to varying degrees, the management objectives for Valley Forge NHP and also the purpose of and need for action, as expressed in Chapter 1: Purpose of and Need for Action of the Final plan/EIS.

**Alternative B** would combine several non-lethal actions including large-scale rotational fencing of 10% to 15% of the park's forested area and reproductive control of does to gradually reduce deer population in the park. Fencing would be rotated once adequate tree regeneration was observed. Under Alternative B, actions described under Alternative A including those to address

<sup>1</sup> Response to CWD includes disease surveillance (detection) actions as well as short-term actions to assess disease prevalence and distribution, minimize the likelihood of spread to surrounding communities and amplification within local deer populations, and if possible, promote elimination of CWD.

CWD would continue. In addition, should CWD be detected within five miles of the park boundary or if the park fell within a state-established CWD containment zone, then deer would be live tested via tonsillar biopsy and CWD-positive deer would be removed from the population. Recurring annual costs for Alternative B would range from \$246,103 to \$1,163,907 depending on the proximity of CWD to the park boundary. Overall costs associated with the life of the plan (15 years) would range from \$8,056,657 to \$14,025,682.

Under this alternative, the NPS would not achieve the target deer density within the life of the plan. Therefore, plant species abundance and diversity would continue to decline in areas outside rotational fences. No forest regeneration would occur outside fencing, and once fencing was rotated these areas would again be exposed to heavy deer browsing and removal of the forest understory. As a result, the integrity of the cultural landscape would continue to be diminished due to the inability of the forests to successfully regenerate or for new plantings to survive browsing. Rotational fencing would introduce a new structural element into the park's cultural landscape that would be inconsistent with the park's contributing buildings and structures and would alter the landscape and viewshed. The overall impact of Alternative B on cultural landscapes would be long-term, moderate, and adverse.

Unprotected earthworks and the forts and redans in the park would continue to erode, as additional plantings to protect these structures would not be successful. If the rotational fences were placed around the structures, then deer browse and trampling would be eliminated. Depending on the location of the fences, the overall impact of Alternative B on historic structures would be long-term, moderate to major, and adverse.

Unprotected archeological sites, such as exposed hut holes and charcoal hearths, also would continue to erode due to trampling and loss of vegetative cover. Installing the rotational fencing would result in numerous areas of ground surface disturbance at the base of the posts. The presence of extensive archeological resources in the park limits the number and extent of areas suitable for rotational fencing. Monitoring would take place in all areas of fence construction, and installation would stop should any unknown archeological resources be discovered. Archeological resources located within the rotational fencing would be protected against trampling in the short-term. However, once the fencing was removed, the new herbaceous vegetation would attract intense deer browsing. This would increase the chance of archeological resources being trampled. Therefore, the overall impact of Alternative B on archeological resources would be long-term, major and adverse.

The overall impact of Alternative B on cultural landscapes, historic structures, and archeological resources would be long-term, moderate to major, and adverse. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative B would have an *adverse effect* on cultural landscapes, historic structures, and archeological resources.

**Alternative C** is the Environmentally Preferred Alternative. This alternative would combine several lethal actions to address issues related to white-tailed deer. Under this alternative qualified federal employees or contractors would directly reduce the deer population in the park through sharpshooting and capture and euthanasia, where appropriate. Under Alternative C, actions described under Alternative A including those to address CWD would continue. In addition, should CWD be detected within five miles of the park boundary or if the park fell

within a state-established CWD containment zone, then active lethal surveillance would be initiated. Recurring annual costs for Alternative C would range from \$56,113 to \$176,817 depending on the proximity of CWD to the park boundary. Overall costs associated with the life of the plan (15 years) would range from \$1,461,332 to \$1,528,832.

A combination of lethal actions would result in achieving the initial target deer density within four years. Heavy browsing would be eliminated, allowing a diverse native plant community to develop. Forest regeneration would be restored, promoting re-establishment of the forest understory and perpetuation of existing forest cover. Reduced deer browsing would maintain the open and closed patterns of the cultural landscape and would also help protect select landscape plantings and other landscape features. Reduced browsing and trampling by deer would allow vegetative cover to be maintained on earthworks, forts, redans and archeological resources in the park and soil erosion would be minimized.

The overall impact of Alternative C on cultural landscapes, historic structures, and archeological resources would be long-term and beneficial. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative C would have *no adverse effect* on cultural landscapes, historic structures, and archeological resources.

**Alternative D** is the NPS Preferred Alternative. This alternative would combine lethal and non-lethal actions to address issues related to white-tailed deer. Under this alternative qualified federal employees or contractors would directly reduce the deer population in the park through sharpshooting as well as capture and euthanasia, where appropriate. Reproductive control of does would be implemented to maintain the deer population at the target deer density of 31-35 deer per square mile. Under Alternative D, actions described under Alternative A would continue. Actions to address CWD would remain the same as described under Alternative C. Recurring annual costs for Alternative D would range from \$108,363 to \$194,517. Overall costs associated with the life of the plan (15 years) would range from \$2,036,082 to \$2,925,282 depending on the proximity of CWD to the park boundary.

The impacts on cultural landscapes, historic structures, and archeological resources related to implementing these actions would be the similar to those described in Alternative C. Initial use of lethal actions would result in achieving the target deer density within four years. Heavy browsing would be eliminated, allowing a diverse native plant community to develop. Forest regeneration would be restored, promoting re-establishment of the forest understory and perpetuation of existing forest cover. Reduced deer browsing would maintain the open and closed patterns of the cultural landscape and would also help protect select landscape plantings and other landscape features. Reduced browsing and trampling by deer would allow vegetative cover to be maintained on earthworks, forts, redans and archeological resources in the park and soil erosion would be minimized.

The overall impact of Alternative D on cultural landscapes, historic structures, and archeological resources would be long-term and beneficial. After applying the Advisory Council criteria of adverse effects (36 CFR 800.5 Assessment of Adverse Effects), the NPS concludes that implementation of Alternative D would have *no adverse effect* on cultural landscapes, historic structures, and archeological resources.

Alternatives C and D were closely ranked in their ability to meet all of the objectives. The NPS also considered the safety of implementing each alternative in selecting the preferred alternative. Under Alternative D, the time that shooting would occur in the park would be limited to population reduction actions, followed by use of reproductive control to maintain the population at the desired density. By maintaining the efficiency of Alternative C in meeting the plan objectives and improving safety by reducing the time that sharpshooting activities would occur in the park, Alternative D proved to be the preferred alternative.

Under the terms of VI E of the 1995 Programmatic Agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, the NPS, "in consultation with the SHPO, will make a determination about which undertakings are programmatic exclusions under IV. A and B, and for all other undertakings, whether there is sufficient information about resources and potential effects on those resources to seek review and comment under 36 CFR 800.4-6 during the plan review process." The NPS is committed to avoiding, minimizing, and/or mitigating adverse impacts to historic resources and welcomes your comments regarding the above determinations.

Upon completion of Section 106 consultation, the Record of Decision will be prepared and distributed. Please direct any questions that you may have to Deirdre Gibson at (610) 783-1047 or [deirdre\\_gibson@nps.gov](mailto:deirdre_gibson@nps.gov). Written comments may be posted to <http://parkplanning.nps.gov> or sent to Superintendent, Valley Forge NHP, 1400 North Outer Line Drive, King of Prussia, Pennsylvania 19406. We would appreciate any written comments by September 15, 2009.

Alternately, if you concur with our determination of effect, you may indicate concurrence by signing this document below and returning it to the Superintendent at the address above or via fax to (610) 783-1038. We look forward to your correspondence.

Sincerely,



Michael A. Caldwell  
Superintendent

Enclosure

cc: Tricia Wingard, VHB  
Louise Brodnitz, Advisory Council on Historic Preservation

Concurred by: \_\_\_\_\_  
(Name and Title) (Date)





Pennsylvania Department of Conservation and Natural Resources

Bureau of Forestry

April 13, 2007

Michael A. Caldwell  
US Department of the Interior  
National Park Service  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

<i>Pennsylvania Natural Diversity Inventory Review, PNDI Number</i>	<b>19036</b>
White-Tailed Deer Management Plan/Environmental Impact Statement	
Valley Forge National Historical Park; Chester & Montgomery Counties	

Dear Mr. Caldwell,

This responds to your request for information on species of special concern within the area under evaluation for this project. We screened this project for potential impacts to species and resources of special concern under the Department of Conservation and Natural Resources' responsibility, which includes plants, natural communities, terrestrial invertebrates and geologic features only.

PNDI records indicate that species and communities of special concern under DCNR's jurisdiction are known to occur in the vicinity of the above-mentioned project. **Please see the attached list for species found in the project area. If any earth disturbance is planned or more detailed project information becomes available, please submit this project to our office for further review of potential impacts to the attached species list.**

This response represents the most up-to-date summary of the PNDI data files and is good for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on-site. A field survey of any site may reveal previously unreported populations. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

This finding applies to impacts to plants, natural communities, terrestrial invertebrates and geologic features only. To complete your review of state and federally-listed species of special concern, please be sure the U.S. Fish and Wildlife Service, the PA Game Commission and the Fish and Boat Commission has been contacted regarding this project either directly or by performing a search with the online PNDI ER Tool found at [www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us).

Rebecca H. Bowen, Environmental Review Specialist, PNHP

DCNR/BOF/PNDI, PO Box 8552, Harrisburg, PA 17105 ~ Ph: 717-772-0258 ~ F: 717-772-0271 ~ [c-rbowen@state.pa.us](mailto:c-rbowen@state.pa.us)

Stewardship

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Pennsylvania Department of Conservation and Natural Resources

Bureau of Forestry

April 18, 2007

Scientific Name	Common Name	Current Status	Proposed Status	Habitat	Management Suggestions
<i>Andropogon gyrans</i>	Elliott's Beardgrass	Not protected	Rare	Dry or moist fields or open woods	
<i>Cuscuta campestris</i>	Dodder	Not protected	Tentatively undetermined	Thickets and waste ground, parasitic on various hosts	Succession is a threat. Control invasives and reduce deer browse.
<i>Desmodium laevigatum</i>	Smooth Tick-trefoil	Not protected	Tentatively undetermined	Dry, sandy woods and roadsides	
<i>Hypericum hypericoides</i>	St Andrew's-cross	Not protected	Tentatively undetermined	Open woods, banks, thickets and serpentine barrens, in dry sandy soil	Deer browse is a threat.
<i>Lupinus perennis</i>	Lupine	Rare	Rare	Alluvial sand and gravel bars, open fields, woods edges and roadsides in sandy soils	No herbicides or mowing/brush clearing between March and August. Railroad clearance may be beneficial to Lupinus but timing is crucial.
<i>Phaseolus polystachios</i>	Wild Kidney Bean	Not protected	Tentatively undetermined	Woods, roadside banks and waste grounds	Invasives, deer browse and frequent mowing are potential threats.
<i>Rotala ramosior</i>	Tooth-cup	Rare	Rare	Wet, sandy shores and other swampy, open ground	Recommended restriction of basin area to foot trail only. Also control invasives and reduce deer density.

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## Stockbridge-Munsee Tribal Historic Preservation Office

Sherry White - Tribal Historic Preservation Officer

8510 Mohican Road

P.O. Box 70

Bowler, WI 54416

January 17, 2007

National Park Service  
Michael Caldwell  
Superintendent  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

RE: White-tailed Deer Management Plan

Dear Mr. Caldwell:

Thank you for contacting the Stockbridge-Munsee Tribe regarding the above referenced project. The Tribe is committed to protecting archaeological sites that are important to tribal heritage, culture and religion. Furthermore, the Tribe is particularly concerned with archaeological sites that may contain human burial remains and associated funerary objects.

As described in your correspondence, the proposed ground disturbing activity of this project does not appear to endanger archaeological sites of interest to the Stockbridge-Munsee Tribe, therefore, the tribe will refer you to your State Archaeologist and your state's Office of Historical Preservation regarding the need for archaeological surveys of further investigation. Should either of these agencies recommend an archaeological survey of the proposed construction site, we ask that the Stockbridge-Munsee Tribe be informed of the results of the survey, including copies of site forms and reports. Also, any changes to the above referenced project should be resubmitted to the Tribal Historical Preservation Officer.

Should this project inadvertently uncover an archaeological site, even after an archaeological survey, we request that you immediately contact the appropriate state agencies, as well as the Stockbridge-Munsee Tribe. Also, we ask that you halt all construction and ground disturbing activities until the Tribe and these state agencies are consulted.

We appreciate your cooperation in contacting the Historic Preservation Office. Should you have any questions, feel free to contact me.

Sincerely,



Sherry White,  
Tribal Historic Preservation Officer

(715) 793-3970

Email: [sherry.white@mohican-nsn.gov](mailto:sherry.white@mohican-nsn.gov)



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Pennsylvania Field Office  
315 South Allen Street, Suite 322  
State College, Pennsylvania 16801-4850



January 11, 2007

Michael Caldwell  
National Park Service  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

RE: USFWS Project #2007-0613

Dear Mr. Caldwell:

This responds to your letter of December 12, 2006, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed White-Tailed Deer Management Plan/Environmental Impact Statement in Chester and Montgomery Counties, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

The proposed project is within the known range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. However, based on the information provided and the project scope, project activities are not likely to adversely affect the bog turtle.

This response relates only to endangered and threatened species under our jurisdiction, based on an office and/or field review of the proposed project. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

*To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.*

Please contact Pam Shellenberger of my staff at 814-234-4090 if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "David Densmore", followed by a long horizontal line extending to the right.

David Densmore  
Supervisor



IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

L76 VAFO(P)

DEC 12 2006

DEC 18 2006

Mr. Justin Newell  
Pennsylvania Natural Heritage Program  
Pennsylvania Natural Diversity Index  
208 Airport Drive  
Middletown, PA 17057

Re: White-tailed Deer Management Plan/Environmental Impact Statement  
Valley Forge National Historical Park  
List of Federally-Listed Rare, Threatened, and Endangered Species

Dear Mr. Newell:

The National Park Service (NPS) proposes to prepare and implement a white-tailed deer management plan/environmental impact statement (EIS) at Valley Forge National Historical Park, in Chester and Montgomery Counties, Pennsylvania. The plan will develop an informed, scientifically based deer management strategy that supports long-term protection, preservation, and restoration of native vegetation and other natural and cultural resources.

This letter serves as notification that we have begun the National Environmental Policy Act (NEPA) compliance process and are proposing to have a Draft EIS available for public and regulatory review late next year. This letter also serves as a record that the NPS is initiating informal consultation with your agency pursuant to the requirements of the 1973 Endangered Species Act, as amended, and *NPS Management Policies 2006*. As part of the scoping for this project, we request any information regarding listed or proposed threatened or endangered species or critical habitats that might occur in the project vicinity, and any special management considerations for such species. The project area includes the entire park and extends 1,325 feet from its borders. It is approximated on the enclosed section of the U.S. Geological Survey topographic map for the vicinity (Valley Forge, Pennsylvania quadrangle).

Additional information on the purpose, need, objectives, and preliminary management alternatives of the plan may be obtained at <http://www.nps.gov/vafo/parkmgmt/white-tailed-deer.htm>. If you have any questions, please do not hesitate to contact Kris Heister, Natural

Resource Manager, at the above address, by telephone at (610) 783-1008, or by email at [kristina\\_heister@nps.gov](mailto:kristina_heister@nps.gov). Your participation in the scoping process for this project is important to us, and we look forward to hearing from you.

Sincerely,

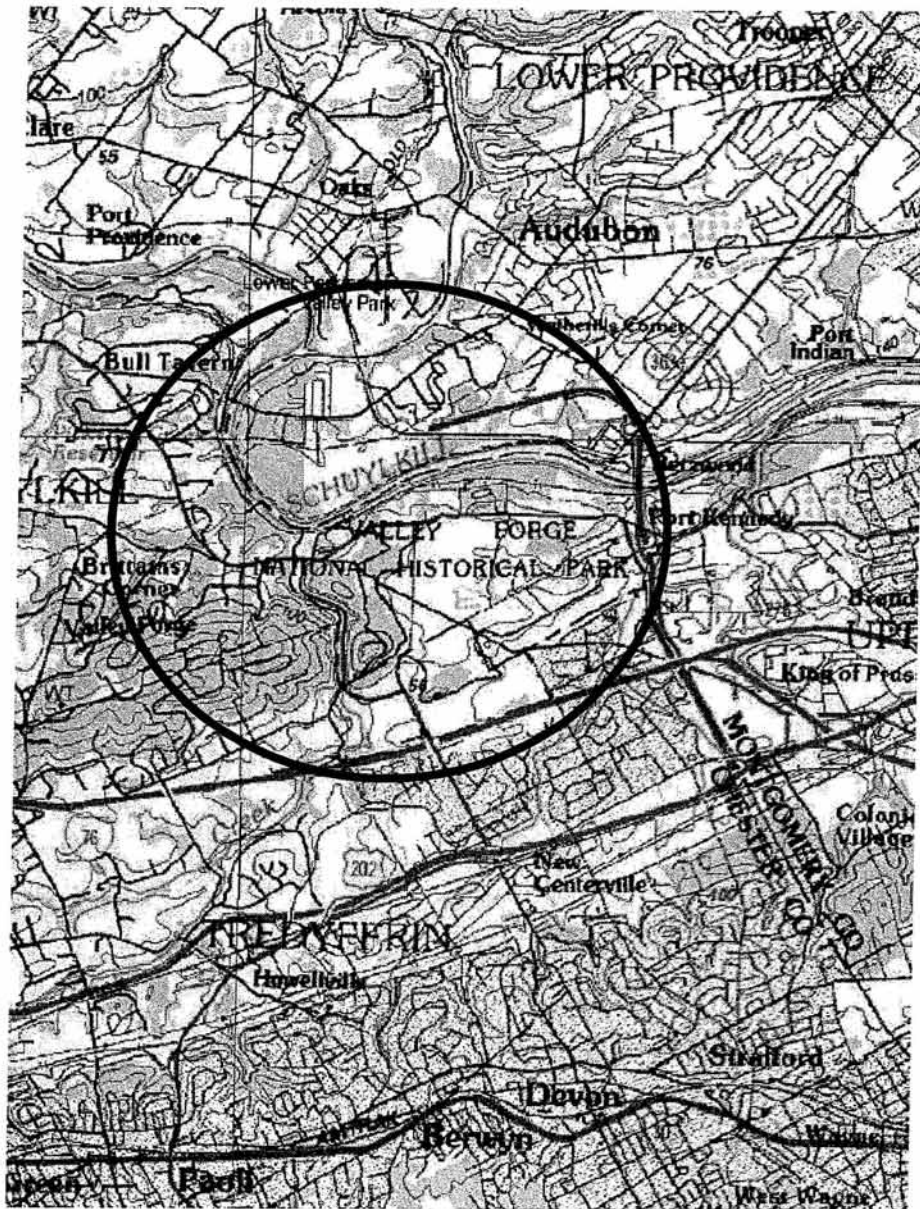


Michael A. Caldwell  
Superintendent

Enclosure

cc: Deirdre Gibson, NPS-VAFO  
Kris Heister, NPS-VAFO  
✓ Tricia Wingard, VHB

Valley Forge, Pennsylvania USGS Quadrangle





IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

L76 VAFO(P)

DEC 12 2006

Ms. Pam Shellenberger  
U.S. Fish and Wildlife Service  
Pennsylvania Field Office  
315 South Allen Street, Suite 322  
State College, PA 16801-4850

Re: White-tailed Deer Management Plan/Environmental Impact Statement  
Valley Forge National Historical Park  
List of Federally-Listed Rare, Threatened, and Endangered Species

Dear Ms. Shellenberger:

The National Park Service (NPS) proposes to prepare and implement a white-tailed deer management plan/environmental impact statement (EIS) at Valley Forge National Historical Park, in Chester and Montgomery Counties, Pennsylvania. The plan will develop an informed, scientifically based deer management strategy that supports long-term protection, preservation, and restoration of native vegetation and other natural and cultural resources.

This letter serves as notification that we have begun the National Environmental Policy Act (NEPA) compliance process and are proposing to have a Draft EIS available for public and regulatory review late next year. This letter also serves as a record that the NPS is initiating informal consultation with your agency pursuant to the requirements of the 1973 Endangered Species Act, as amended, and *NPS Management Policies 2006*. As part of the scoping for this project, we request any information regarding listed or proposed threatened or endangered species or critical habitats that might occur in the project vicinity, and any special management considerations for such species. The project area includes the entire park and extends 1,325 feet from its borders. It is approximated on the enclosed section of the U.S. Geological Survey topographic map for the vicinity (Valley Forge, Pennsylvania quadrangle).

Additional information on the purpose, need, objectives, and preliminary management alternatives of the plan may be obtained at <http://www.nps.gov/vafo/parkmgmt/white-tailed-deer.htm>. If you have any questions, please do not hesitate to contact Kris Heister, Natural

Resource Manager, at the above address, by telephone at (610) 783-1008, or by email at [kristina\\_heister@nps.gov](mailto:kristina_heister@nps.gov). Your participation in the scoping process for this project is important to us, and we look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael A. Caldwell". The signature is fluid and cursive, with the first name "Michael" being the most prominent.

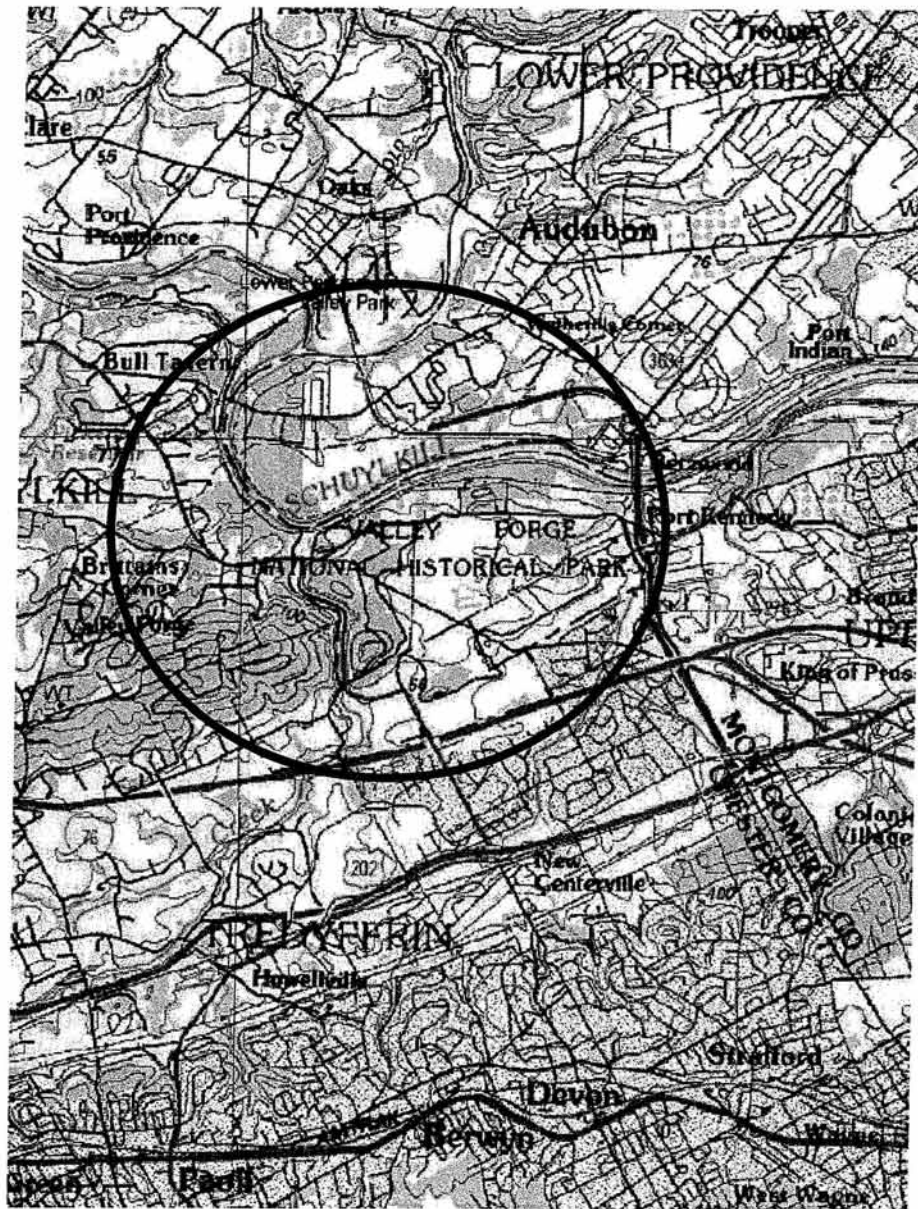
Michael A. Caldwell  
Superintendent

Enclosure

cc: Deirdre Gibson, NPS-VAFO  
Kris Heister, NPS-VAFO  
✓ Tricia Wingard, VHB



Valley Forge, Pennsylvania USGS Quadrangle





IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

L76 VAFO(P)

DEC 12 2006

DEC 12 2006

Mr. John Fowler  
Executive Director  
Advisory Council on Historic Preservation  
809 Old Post Office Building  
1100 Pennsylvania Avenue, NW  
Washington, DC 2004

Re: White-tailed Deer Management Plan/Environmental Impact Statement  
Valley Forge National Historical Park  
Notification of Combination NEPA/Section 106 Compliance

Dear Mr. Fowler:

The National Park Service (NPS) proposes to prepare and implement a white-tailed deer management plan/environmental impact statement (EIS) at Valley Forge National Historical Park, in Chester and Montgomery Counties, Pennsylvania. The plan will develop an informed, scientifically based deer management strategy that supports long-term protection, preservation, and restoration of native vegetation and other natural and cultural resources.

At this stage in the planning process, we are ready to initiate consultation as set forth in 36 CFR 800 and the Programmatic Agreement among the Advisory Council for Historic Preservation, the National Conference of State Historic Preservation Officers, and the NPS. This letter serves as notification that the process and documentation required for compliance with the National Environmental Policy Act (NEPA) will be used to comply with Section 106 of the National Historical Preservation Act of 1966, as amended. We are proposing to have a Draft EIS available for public and regulatory review late next year. The Draft EIS will contain an assessment of effect for all cultural resources potentially affected by the plan.

We appreciate the long and positive working relationship the park has enjoyed with your office and look forward to your participation in this new planning process. Additional information on the purpose, need, objectives, and preliminary management alternatives of the plan may be obtained at <http://www.nps.gov/vafo/parkmgmt/white-tailed-deer.htm>. If you have any questions

please contact Kristina Heister, Natural Resource Manager, at the above address, by telephone at 610-783-1008, or by email at [kristina\\_heister@nps.gov](mailto:kristina_heister@nps.gov). Your participation in the scoping process for this project is important to us, and we look forward to hearing from you.

Sincerely,



Michael A. Caldwell  
Superintendent

cc: Deirdre Gibson, NPS-VAFO  
Kris Heister, NPS-VAFO  
✓ Tricia Wingard, VHB  
Barbara Franco, Pennsylvania Historical and Museum Commission



4N REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

L76 VAFO(P)

DEC 12 2006

Ms. Barbara Franco  
Executive Director  
Pennsylvania Historical and Museum Commission  
Bureau for Historic Preservation  
Commonwealth Keystone Building, Second Floor  
400 North St.  
Harrisburg, PA 17120-0093

Re: White-tailed Deer Management Plan/Environmental Impact Statement  
Valley Forge National Historical Park  
Notification of Combination NEPA/Section 106 Compliance

Dear Ms. Franco:

The National Park Service (NPS) proposes to prepare and implement a white-tailed deer management plan/environmental impact statement (EIS) at Valley Forge National Historical Park, in Chester and Montgomery Counties, Pennsylvania. The plan will develop an informed, scientifically based deer management strategy that supports long-term protection, preservation, and restoration of native vegetation and other natural and cultural resources.

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Sincerely,

A handwritten signature in cursive script, reading "Michael A. Caldwell".

Michael A. Caldwell  
Superintendent

cc: Deirdre Gibson, NPS-VAFO  
Kris Heister, NPS-VAFO  
✓ Tricia Wingard, VHB  
John Fowler, Advisory Council on Historic Preservation

# ONEIDA INDIAN NATION



## ONEIDA NATION HOMELANDS

November 27, 2006

Deirdre Gibson  
Chief of Planning and Natural Resources  
U.S. Department of the Interior  
National Park Service  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

Dear Ms. Gibson,

Thank you for soliciting Oneida Indian Nation involvement in your White-tailed Deer Management Plan (letter of Nov. 2). The proposed project does not impact anything we know to be culturally or religiously significant and does not threaten any bonds Oneidas feel toward Valley Forge.

We appreciate your courtesy of the invitation and in acknowledging Oneida associations with the park.

Sincerely,

A handwritten signature in cursive script, reading "Anthony Wonderley".

Anthony Wonderley, Ph.D.  
Historian  
Oneida Indian Nation  
Legal Department  
1256 Union Street PO Box 662  
Oneida, NY 13421-0662

221 Union Street  
PO Box 662 • Oneida, NY 13421-0662  
(315) 829-8461 • Fax (315) 829-8473



IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

H2217 VAFO(S)

NOV 2 2006

Anthony Wonderley, Ph.D., Nation Historian  
Oneida Indian Nation  
221 Union Street  
Oneida, NY 13421-0662

Dear Dr. Wonderley:

The National Park Service is currently evaluating alternatives for a White-tailed Deer Management Plan for Valley Forge National Historical Park (NHP), and in conjunction, conducting an Environmental Impact Study (EIS) of the proposed alternatives. Valley Forge NHP encompasses 3,452 acres in southeastern Pennsylvania, in a rapidly growing suburban region 18 miles northwest of Philadelphia. The park was established in 1976, with the explicit purpose "to preserve the cultural and natural resources that embody and commemorate the Valley Forge experience and the American Revolution ...". Major issues to be addressed include preservation of native plant and wildlife communities, threatened and endangered species, and significant elements of the cultural landscape.

In recognition of the fact that the Oneida Nation has a traditional association with the park, we would like to initiate the Section 106 process of the National Historic Preservation Act (36 CFR 800.2 (c)(2)(B) (ii)). We are interested in any information you may wish to provide or concerns you may have and whether you are aware of sacred sites within the park.

This letter serves as an invitation to the Oneida Nation to inform us of any features of Valley Forge NHP that may hold cultural or religious significance, and, if so, to initiate consultation regarding the White-tailed Deer Management Plan/EIS. My staff and I here at Valley Forge NHP would like to discuss the management alternatives with the Oneida Nation, if the tribe is interested, so that we may adequately integrate tribal comments, perspectives, concerns, and recommendations into the proposed plan.

We look forward to hearing any thoughts your tribe may have regarding the future planning for management of white-tailed deer and preservation of natural and cultural resources in the park.

If you have any questions or would like additional information, please contact Deirdre Gibson, Chief of Planning and Resource Management, Valley Forge National Historical Park, at 610-783-1047.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael A. Caldwell". The signature is written in a cursive, flowing style.

Michael A. Caldwell  
Superintendent

Jcc: Tricia Wingard, VHB





IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

H2217 VAFO(S)

NOV 2 2006

Corina Williams, THPO  
Oneida Nation of Wisconsin  
Cultural Heritage  
P.O. Box 365  
Oneida, WI 54155

Dear Ms. Williams:

The National Park Service is currently evaluating alternatives for a White-tailed Deer Management Plan for Valley Forge National Historical Park (NHP), and in conjunction, conducting an Environmental Impact Study (EIS) of the proposed alternatives. Valley Forge NHP encompasses 3,452 acres in southeastern Pennsylvania, in a rapidly growing suburban region 18 miles northwest of Philadelphia. The park was established in 1976, with the explicit purpose "to preserve the cultural and natural resources that embody and commemorate the Valley Forge experience and the American Revolution ...". Major issues to be addressed include preservation of native plant and wildlife communities, threatened and endangered species, and significant elements of the cultural landscape.

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We look forward to hearing any thoughts your tribe may have regarding the future planning for management of white-tailed deer and preservation of natural and cultural resources in the park.

NOV 2 2006

If you have any questions or would like additional information, please contact Deirdre Gibson, Chief of Planning and Resource Management, Valley Forge National Historical Park, at 610-783-1047.

Sincerely,

A handwritten signature in black ink, reading "Michael A. Caldwell". The signature is written in a cursive style with a large, stylized "M" and "C".

Michael A. Caldwell  
Superintendent

✓cc: Tricia Wingard, VHB



IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

H2217 VAFO(S)

NOV 2 2006

Tamara Francis, NAGPRA Director  
Delaware Nation, NAGPRA Office  
P.O. Box 825  
Anadarko, OK 73004

Dear Ms. Francis:

The National Park Service is currently evaluating alternatives for a White-tailed Deer Management Plan for Valley Forge National Historical Park (NHP), and in conjunction, conducting an Environmental Impact Study (EIS) of the proposed alternatives. Valley Forge NHP encompasses 3,452 acres in southeastern Pennsylvania, in a rapidly growing suburban region 18 miles northwest of Philadelphia. The park was established in 1976, with the explicit purpose "to preserve the cultural and natural resources that embody and commemorate the Valley Forge experience and the American Revolution ...". Major issues to be addressed include preservation of native plant and wildlife communities, threatened and endangered species, and significant elements of the cultural landscape.

In recognition of the fact that the park is located within Delaware Nation ancestral homelands, we would like to initiate the Section 106 process of the National Historic Preservation Act (36 CFR 800.2 (c)(2)(B) (ii)). We are interested in any information you may wish to provide or concerns you may have and whether you are aware of sacred sites within the park.

This letter serves as an invitation to the Delaware Nation to inform us of any features of Valley Forge NHP that may hold cultural or religious significance, and, if so, to initiate consultation regarding the White-tailed Deer Management Plan/EIS. My staff and I here at Valley Forge NHP would like to discuss the management alternatives with the Delaware Nation, if the tribe is interested, so that we may adequately integrate tribal comments, perspectives, concerns, and recommendations into the proposed plan.

We look forward to hearing any thoughts your tribe may have regarding the future planning for management of white-tailed deer and preservation of natural and cultural resources in the park.

Nov 6 2 2006

If you have any questions or would like additional information, please contact Deirdre Gibson, Chief of Planning and Resource Management, Valley Forge National Historical Park, at 610-783-1047.

Sincerely,

A handwritten signature in cursive script, reading "Michael A. Caldwell".

Michael A. Caldwell  
Superintendent

/cc: Tricia Wingard, VHB



IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE  
Valley Forge National Historical Park  
1400 North Outer Line Drive  
King of Prussia, PA 19406-1009

H2217 VAFO(S)

NOV 2 2006

Sherry White, THPO  
Stockbridge-Munsee Community  
Historic Preservation Office  
N8476 Mo He Con Nuck Rd.  
Bowler, WI 54416

Dear Ms. White:

The National Park Service is currently evaluating alternatives for a White-tailed Deer Management Plan for Valley Forge National Historical Park (NHP), and in conjunction, conducting an Environmental Impact Study (EIS) of the proposed alternatives. Valley Forge NHP encompasses 3,452 acres in southeastern Pennsylvania, in a rapidly growing suburban region 18 miles northwest of Philadelphia. The park was established in 1976, with the explicit purpose "to preserve the cultural and natural resources that embody and commemorate the Valley Forge experience and the American Revolution ...". Major issues to be addressed include preservation of native plant and wildlife communities, threatened and endangered species, and significant elements of the cultural landscape.

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We look forward to hearing any thoughts your tribe may have regarding the future planning for management of white-tailed deer and preservation of natural and cultural resources in the park.

NOV 07 2006

If you have any questions or would like additional information, please contact Deirdre Gibson, Chief of Planning and Resource Management, Valley Forge National Historical Park, at 610-783-1047.

Sincerely,

A handwritten signature in black ink, reading "Michael A. Caldwell". The signature is written in a cursive style with a large, stylized "M" and "C".

Michael A. Caldwell  
Superintendent

✓cc: Tricia Wingard, VHB